Claims

What is claimed is:

1. A positioning system for determining a position P of a positioning terminal, the system including a plurality of first signal sources each emitting a respective first signal, and one or more second signal sources each emitting a respective second signal, the first signals being synchronous to each other and the second signals being non-synchronous with the first signals, for, based on a signal propagation time and signal propagation speed of the first signals, determining a distance from the positioning terminal to the first signal sources so as to determine a position of the positioning terminal, said positioning system comprising:

a measurement device for receiving the signals from the first signal sources to determine the position P and a time of measurement when the measurement device receives the first signals and for, based on the time of measurement, measuring a receiving time (T_R) of a predetermined event of the second signals;

a control device for determining a signal propagation time (t) between the measurement device and one of the second signal sources by calculating a relative distance |P-Q| between the measurement device and the one second signal source based on the position P measured by the measurement device and a position (Q) of the one second signal source and by dividing the resulting distance by the signal propagation speed, and for determining a time (T_T) at which the one second signal source originates the predetermined event by solving T_R - t;

the positioning terminal having a receiving device for receiving the signals from the first and second signal sources; and

a communication device for communicating between the control device and the positioning terminal,

wherein the positioning terminal uses the time T_T as a reference to receive the signals from the first signal sources for positioning.

2. A positioning system for determining a position P of a positioning terminal, the system including a plurality of first signal sources each emitting a respective first signal, and one or more second signal sources each emitting a respective second signal, the first signals being synchronous with each other and the second signals being non-synchronous with the first signals, for, based on a signal propagation time and signal propagation speed of at least one of the first and second signals, determining a distance from the positioning terminal to the first and second signal sources so as to determine a position of the positioning terminal, said positioning system comprising:

a measurement device associated with each second signal source for receiving the signals from the first signal sources to determine the position P and a time of measurement when the measurement device receives the first signals and for, based on the time of measurement, measuring a receiving time (T_R) of a predetermined event of the second signals;

a control device for determining a signal propagation time (t) between the measurement device and its associated second signal source by calculating a relative distance |P-Q| between the measurement device and its associated second signal source based on the position P measured by the measurement

device and a position (Q) of the second signal source and by dividing the resulting distance by the signal propagation speed, and for determining a time (T_T) at which the second signal source originates the predetermined event by solving T_R - t;

the positioning terminal having a receiving device for receiving the signals from the first and second signal sources; and

a communication device for communicating between the control device and the positioning terminal,

wherein the positioning terminal receives the first and second signals for positioning.

- 3. The positioning system according to claim 1, wherein the first signal sources further comprise GPS satellites.
- 4. The positioning system according to claim 1, wherein the second signal sources further comprise base stations of a mobile communication network.
- 5. The positioning system according to claim 1, wherein the measurement device further comprises a mobile terminal in good conditions, where the position P of the measurement device can be determined without accurate time information, and measures P and T_R to voluntarily report the measured P and T_R to the control device in the same mobile communication network.
- 6. The positioning system according to claim 1, wherein the measurement device further comprises a mobile terminal in good conditions, where the position

P of the measurement device can be determined without accurate time information, and measures P and T_R according to a request from the control device in the same mobile communication network to report the measured P and T_R to the control device.

- 7. A positioning system according to claim 1, wherein the second signal sources further comprise television broadcast stations.
- 8. The positioning system according to claim 2, wherein the first signal sources further comprise GPS satellites.
- 9. The positioning system according to claim 2, wherein the second signal sources further comprise base stations of a mobile communication network.
- 10. The positioning system according to claim 2, wherein the measurement device further comprises a mobile terminal in good conditions, where the position P of the measurement device can be determined without accurate time information, and measures P and T_R to voluntarily report the measured P and T_R to the control device in the same mobile communication network.
- 11. The positioning system according to claim 2, wherein the measurement device further comprises a mobile terminal in good conditions, where the position P of the measurement device can be determined without accurate time information, and measures P and T_R according to a request from the control

device in the same network to report the measured P and $T_{\mbox{\scriptsize R}}$ to the control device.

12. A positioning system according to claim 1, wherein the second signal sources further comprise television broadcast stations.